

What is Claimed is:

1. A method of generating an image having a plurality of bands, comprising the steps of:

receiving a page description representative of elements of the image;

building a display list buffer having a plurality of display list elements (DLE) derived from the page description, each display list element being representative of a corresponding graphic item; and

building a banded display list representative of the plurality of bands of the image, wherein for each band of the plurality of bands a set of templates is stored in the banded display list in which each template points to a DLE in the display list buffer for each corresponding graphic item that is spawned within the band.

2. The method of Claim 1, further comprising the step of rendering each band by using the set of templates stored for that band to access a corresponding set of DLEs from the display list buffer.

3. The method of Claim 1, wherein each template contains an opcode field that describes the DLE being pointed to.

4. The method of Claim 1, wherein each template contains a number of elements field that specifies a number of elements of a vector DLE being pointed to that falls within the band.

5. The method of Claim 1, wherein each template contains a header offset field that specifies a bounding box in the display list buffer for a vector set of DLEs that are interpreted together.

6. The method of Claim 1, wherein each template contains a DLE offset field that specifies an offset in the display list buffer of the first element of a vector set of DLEs that is being pointed to.

7 A method of generating an image having a plurality of bands, comprising the steps of:

receiving a page description representative of elements of the image;

building a display list buffer having a plurality of display list elements (DLE) derived from the page description, each display list element being representative of a corresponding graphic item;

building a banded display list representative of the plurality of bands of the image, wherein for each band of the plurality of bands a set of templates is stored the banded display list in which each template points to a DLE in the display list buffer for each corresponding graphic item that is spawned within the band, wherein each template comprises opcode field that describes the DLE being pointed to, a number of elements field that specifies a number of elements of a vector DLE being pointed to that falls within the band, a header offset field that specifies a bounding box in the display list buffer for a vector set of DLEs that are interpreted together, and a DLE offset field that specifies an offset in the display list buffer of the first element of a vector set of DLEs that is being pointed to; and

rendering each band by using the set of templates stored for that band to access a corresponding set of DLEs from the display list buffer.

8. An image processing system that renders a graphical image in a banded manner, the system comprising:

a microprocessor contained on a single integrated circuit connected to an on-chip memory within the integrated circuit;

an image buffer memory connected to the microprocessor to receive rendered bands;

means for displaying the image connected to receive each rendered band for display; and

wherein the microprocessor is operable to prepare a page having a plurality of bands for display by performing the steps of:

receiving a page description representative of elements of the image;

building a display list buffer having a plurality of display list elements (DLE) derived from the page description, each display list element being representative of a corresponding graphic item;

building a banded display list representative of the plurality of bands of the image, wherein for each band of the plurality of bands a set of templates is stored in the banded display list in which each template points to a DLE in the display list buffer for each corresponding graphic item that is spawned within the band; and

rendering each band by using the set of templates stored for that band to access a corresponding set of DLEs from the display list buffer.

9. The system of Claim 8, wherein the step of rendering comprises loading a set of templates for each of the plurality of bands into the on-chip memory.

10. The system of Claim 9, wherein the image buffer is a band buffer located in the on-chip memory and wherein the plurality of templates for each of the plurality of bands is loaded into the on-chip memory together with the band buffer.

11. The system of Claim 8 being a printer, wherein the means for displaying is a print engine connected to receive each rendered band for printing.